

In the Claims:

Claims 1-26 (Canceled).

Claim 27 (Currently Amended). The method of claim ~~24~~ 39, wherein the ~~user-selected~~ distance of each ~~one~~ of the ~~second~~ voxels from the reference surface is determined by a minimum distance measure.

Claim 28 (Previously Presented). The method of claim 27, wherein the minimum distance measure is a Euclidean distance.

Claim 29 (Currently Amended). The method according to claim ~~24~~ 39, wherein ~~the~~ the volumetric data is ~~medial~~ medical image data; ~~and~~
~~the reference surface is a body-region surface.~~

Claim 30 (Previously Presented). The method according to claim 29, wherein said volumetric data is a thorax CT scan.

Claim 31 (Currently Amended). The method according to claim ~~29~~ 39, wherein the ~~body-region~~ reference surface is a surface of a lung.

Claim 32 (Currently Amended). The method according to claim 29, wherein the ~~body-region~~ reference surface is a surface of a pathological structure.

Claim 33 (Currently Amended). The method of claim ~~24~~ 39, wherein the volumetric data is three-dimensional microscopy data.

Claims 34-38 (Canceled).

Claim 39 (New). A method for revealing a suspicious region in an organ of a body, which comprises:

scanning a preselected region of body tissue that contains an organ of interest to obtain a volumetric database including voxels of the preselected region;

saving the volumetric database in memory as a saved volumetric database;

subjecting the saved volumetric database to a segmentation technique to identify and distinguish an outer surface of the organ from surrounding tissue;

using the outer surface of the organ as a reference surface;

selecting a distance from said outer reference surface of the organ;

extracting from said saved database voxels that are within the organ and that are located at the selected distance from the identified outer reference surface;

mapping the extracted voxels onto a two-dimensional grid; and

displaying said two-dimensional grid onto a two-dimensional display to reveal any suspicious region in the organ at the selected predetermined distance from the reference surface.

Claim 40 (New). The method according to claim 39, which further comprises, after determining the distance from said reference surface for each voxel outside said reference surface, reformatting said voxels by shifting each of said voxels in said reference surface by a distance along a respective parallel line into a common plane while shifting each voxel in each of the lines by the distance that the given voxel in the reference surface in the given line was shifted.

Claim 41 (New). The method according to claim 40, wherein said respective parallel lines are orthogonal to said common plane.

Claim 42 (New). The method according to claim 40, which further comprises determining the distance from said reference surface for each voxel outside said reference surface by calculating

the distance of a given one of the voxels from a voxel in said reference surface along said respective parallel line.

Claim 43 (New). The method according to claim 41, which further comprises determining the distance from said reference surface for each voxel outside said reference surface by calculating the distance of a given one of the voxels from a voxel in said reference surface along said respective orthogonal parallel line.

Claim 44 (New). The method according to claim 40, which further comprises:

selecting new sample voxels from said set of voxels, said sample voxels being a new distance from said reference surface, the new distance being different from the given distance;

mapping said new sample voxels onto a two-dimensional grid; and

displaying said two-dimensional grid on a two-dimensional display with said voxels with a property designating a suspicious region being distinguishable from said voxels with a property designating the organ.